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ABSTRACT

College enrollment rates of blacks have historically trailed those of whites, although the actual size of the racial gap has fluctuated in recent decades. Using logistic regression and a decomposition analysis, this study investigated the extent to which this college-going gap is due to racial disparities in socioeconomic family backgrounds, academic performance, and expectations and values about education. Sizable differences are found between blacks and whites in socioeconomic family background and academic performance, as well as interactions between race and these variables. However, expectations and values about education are similar between the groups and contribute little to racial disparities in college attendance. (Contains 2 figures, 4 tables, and 43 references.) (SLD)

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Pamela R. Bennett and Yu Xie

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Report No. 00-447

Research Report

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Explaining the Black-White Gap in College Attendance: Racial Differences versus Socioeconomic Determinants

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Abstract

College enrollment rates of blacks have historically trailed those of whites, although the actual size of the racial gap has fluctuated in recent decades. Using logistic regression and a decomposition analysis, we seek to ascertain the extent to which this college-going gap is due to racial disparities in socioeconomic family background, academic performance, and expectations and values about education. We find sizable differences between blacks and whites in socioeconomic family background and academic performance, as well as interactions between race and these variables. However, expectations and values about education are similar between the groups and contribute little to racial disparities in college attendance.

Keywords: Race, Racial Differences, College Attendance, Education, Educational Attainment, Socioeconomic Inequality.

Dataset Used: National Education Longitudinal Survey (NELS): U.S., 1988-1994

Introduction

In 1902, W.E.B. Du Bois published "On the Training of Black Men." In it, he describes the growth of institutions in the South that were set up to formally educate blacks after their emancipation. He emphasized the need for blacks to obtain more than basic literacy skills, to acquire the kind of education that would not only improve their productivity but also assist in their journey to self-understanding. For Du Bois (1902), it is through the training of a college education that "...there must come a loftier respect for the sovereign human soul that seeks to know itself and the world about it; that seeks a freedom for expansion and self-development" (pp. 296-297). His conceptualization of the function of "Negro colleges" is as applicable today as it was at the turn of the century. However, his ideas are no longer limited to black colleges, but apply to all colleges and universities that blacks attend, and can be extended to describe the general purpose of attaining a college education, and for all who seek to obtain it. On access to higher education at the time, Du Bois (1902) wrote "...we daily hear that an education that encourages aspiration, that sets the loftiest of ideals and seeks as an end culture and character rather than breadwinning, is the privilege of white men and the danger and delusion of black" (p. 291).

While this statement is no longer descriptive of blacks' and whites' relative access to higher education today, obtaining academic training in America's colleges and universities is still marked by racial inequality. For example, it has been documented that blacks' college enrollment rates trail those of whites, although the actual size of the racial gap has fluctuated somewhat in recent decades. In the mid-1970s, the proportion of black high school graduates who enrolled in college lagged behind that of whites by more than 8 percentage points (U.S. Department of Education 1993). In 1980, the black-white gap in college attendance stood at 7.5 percentage points, but by 1990 it had virtually doubled, reaching 14.1 percentage points.

Various explanations for the black-white gap in college enrollment have been suggested. With statistical analyses of a nationally representative longitudinal data set, we test three popular ones: black-white differences in (1) expectations and values regarding education, (2) family socioeconomic background, and (3) academic achievement. We refer to the first as a cultural explanation, to the second as a socioeconomic explanation, and to the third as an achievement explanation. We find that while blacks and whites differ substantially in their socioeconomic background and academic performance, they do not differ considerably in their educational expectations and values towards schooling. Overall, our analysis provides support for the socioeconomic and achievement explanations but little evidence for the cultural explanation.

Explanatory Perspectives

The educational attainment gap between blacks and whites has been a longstanding interest of social scientists. Scholars have attempted to explain this gap by borrowing theoretical perspectives on general group differences in educational attainment. The three most popular perspectives differ in the level of units of analysis. The cultural explanation suggests that educational gaps originate at the aggregate level. It argues that the culture of low-status groups does not provide conducive environments for preparing youth for educational success. The socioeconomic explanation centers on the family level and posits that educational achievement disparities are due to social and economic inequalities in youth's family backgrounds. The

achievement explanation focuses on disparities in ability or academic performance between groups. Below we discuss these explanations in greater detail and apply them to the specific inquiry into black-white differences in college enrollment.

Cultural Explanation

The cultural explanation of racial disparities in college attendance implicitly posits that race is a proxy for many characteristics relevant to college-going behavior. The argument holds that the culture of black Americans is deficient with respect to educational achievement (Lewis 1959; Baca Zinn 1989; Ogbu 1992). That is, blacks have attitudes and patterns of behavior that disadvantage them in the educational attainment process.

Cultural deficiency arguments were popular in the 1960s (Lewis 1959, 1968a, 1968b; Moynihan 1965) and lingered into the 1980s (Murray 1984). Explanations of blacks' oppositional culture focus first on their subordinate place in America's social structure, and second, on their response to such positions. According to culturalists, blacks experience or perceive barriers to their success in the United States due to racial discrimination and structural inequality. They respond by lowering their educational and occupational expectations to be more in alignment with the realities that they face. They may also define themselves in opposition to mainstream goals, thereby devaluing education as a means for upward mobility (Ogbu 1978, 1992). These lowered expectations and values regarding education depress blacks' academic achievement and, consequently, lower their college enrollment rates relative to those of whites.

Research on the educational expectations of black and white students challenges these arguments. Hauser and Anderson (1991) find that blacks and whites both experienced upward trends in their plans to complete four-year college degrees. Although the trend for whites was somewhat higher than that for blacks, Hauser and Anderson conclude that the difference in the trends was not large enough to cause a marked increase in the black-white gap in college enrollment rates between 1976 and 1986. Solorzano (1991) finds no differences in the degree to which black and white high school sophomores in 1980 expected to obtain college degrees. When socioeconomic status is controlled, blacks have higher educational expectations than whites. Moreover, black parents communicated higher educational aspirations for their children than did similar white parents. Comparable results are also reported from studies covering years 1980 and 1992 (Morgan 1996).

Other research speaks directly to Ogbu's cultural explanation of racial differences in achievement. Ainsworth-Darnell and Downey (1998) compare black and white students' perceptions of obstacles to their success, as well as the connections they make between education and occupational attainment. They find that blacks do not perceive barriers to their success in the United States to any greater degree than do white students, nor do blacks and whites differ in the association they make between education and subsequent occupational achievement.

Socioeconomic Explanation

The socioeconomic explanation of the black-white gap in college entry focuses on the relationship among race, socioeconomic background, and educational attainment. It posits that racial differences in the social and economic family backgrounds of youth account for racial differences in college enrollment, arguing that those attributes and resources affecting college attendance are correlated with or determined in large part by socioeconomic background. Thus, black and white youth with similar socioeconomic family backgrounds would attend college at similar rates.

Blacks and whites in the United States differ substantially on various dimensions of socioeconomic background (Farley 1984; Farley and Allen 1987; Massey and Denton 1993; Oliver and Shapiro 1995). For example, the income of blacks has historically lagged behind that of whites. In 1994, blacks' median household income was $21,027--$13,000 less than that of whites (U.S. Bureau of the Census 1996). An even sharper picture of racial disparity emerges in an examination of distributional differences across income quintiles. In 1993, over 20% of whites earned incomes that placed them in the highest quintile compared to only 9.3% of blacks; fewer than 20% of whites had incomes that placed them in the lowest quintile, while 37% of blacks earned such incomes (U.S. Bureau of the Census 1996).

Of particular significance is the large and persistent racial gap in poverty between white and black children. In 1970, for example, just over 10% of white children lived in poverty; yet four times as many black children experienced poverty in the same year. By 1994, the black-white childhood poverty gap remained substantial at 27 percentage points (U.S. Bureau of the Census 1996). The black-white gap in childhood poverty has important implications. Childhood deprivation may trigger initial educational disadvantages that are compounded over the educational attainment process. A study of children in the Panel Study of Income Dynamics who were born between 1967 and 1973 shows that family income during childhood significantly affects later educational attainment (Duncan et al. 1998). This relationship is particularly salient among low-income children, for whom years of completed schooling is estimated to increase 1.3 years per $10,000 increment in family income. For high-income children, the comparable estimate is a .13-year increase.

Status attainment research in the past three decades has well documented the positive effects of family income, parental education and occupation on children's educational attainment (Blau and Duncan 1967; Sewell and Shah 1968; Sewell 1971). In a longitudinal study of a cohort of high school students in Wisconsin, those from high-status backgrounds had four times the chance of attending college and six times the chance of obtaining a college degree compared with their low-status counterparts (Sewell 1971). Differences in the chance of attending and graduating from college remained significant after controlling for academic ability. Moreover, the relationship between social background and educational attainment in general, and between socioeconomic background and college attendance in particular, has increased over time (Mare 1981).

Achievement Explanation

There are two forms of the achievement explanation for the black-white gap in college attendance. Both attribute the gap to racial differences in academic performance. However, the causes of black-white differences in academic performance are debated. The most controversial form of the explanation asserts that blacks and whites differ in innate cognitive ability. This explanation is not new, but has been recently re-articulated by Herrnstein and Murray (1994). According to this explanation, black-white differences in mental ability are rooted in differences in genetic makeup and are reflected in blacks' lower I.Q. and lower achievement test scores (see Jensen 1969). There is, however, much debate concerning whether the purported race gap in intelligence is a function of biology, physical and social environments, or a combination of these, and evidence supporting a biological explanation of intelligence fails to preclude an environmental one (see Crane 1994 for discussion). Furthermore, implicit in this form of the achievement explanation is the assumption of race as a biological rather than a social construct.

Yet, it has not been established with certainty that blacks and whites represent distinct "races" as opposed to socially defined groups (Ogbu 1978; Crane 1994).

Additionally, there is no consensus regarding whether "intelligence" tests measure general intelligence (what is commonly referred to as 'g' by psychologists), specific aspects of intelligence, or acquired knowledge (Crane 1994), and this criticism brings us to the second form of the achievement explanation. That is, differences in academic performance between blacks and whites are not due to differences in genetic cognitive ability, but to variation in their academic preparation. Thus, black-white differences in achievement scores reflect racial differences in accumulated knowledge (Jones et al. 1986). There is evidence to suggest that I.Q. tests reflect differences in learning. Increases in test scores over the past several decades have occurred too rapidly to be the result of genetic changes in populations (Huang and Hauser 1998). Moreover, to the extent that test scores influence college admissions decisions, they do so as *knowledge-based* achievement tests rather than intelligence tests. Standardized achievement tests measure whether and to what degree students have *learned* calculus, for example, but not whether students can quickly comprehend calculus given no exposure to it.

If this second form of the achievement explanation is valid, then racial differences in acquired knowledge are partly due to racial differences in learning opportunities, which can result from both individual- and school-level factors. Black students may, on average, take courses that are less academically challenging and thus are in possession of less academic knowledge than whites (Jones 1984; Matthews 1984; Gamoran 1987; Oakes 1990). Differential course selection by race has been attributed to (1) the tracking of students into more or less advanced courses by teachers and school administrators (Rosenbaum 1980; Oakes 1990; Lucas 1999), (2) students' own decisions regarding which courses to take, and (3) incomplete information concerning college course requirements (Rosenbaum 1976; Rosenbaum 1980; Oakes 1990). Racial disparities in learning opportunities can also arise from differences in the quality of schools blacks and whites attend (Lee and Bryk 1988). If blacks are concentrated in schools that, for example, do not offer advanced or advance placement courses, are staffed by teachers unqualified in the subjects they teach, are poorly funded and overcrowded, then blacks will have less opportunity than whites to acquire the academic knowledge that standardized achievement tests require them to demonstrate (Jones 1984; Matthews 1984; Oakes 1990).

Summary

In sum, various explanations for the longstanding black-white gap in educational attainment have been advanced by social scientists. We have reviewed three of the most popular ones here. First, the cultural explanation argues that as a response to or a consequence of blocked opportunities, blacks have developed a subculture composed of attitudes and behaviors that do not facilitate academic achievement and educational attainment. Second, the socioeconomic explanation attributes the education gap to inequalities between black and white youth in their socioeconomic family background. Last, the achievement explanation ascribes the gap to racial differences in academic performance, with one form of the explanation attributing the performance gap to genetic cognitive differences between blacks and whites, and a second form attributing it to differences in learning opportunities. In this paper, we do not attend to the underlying biology-versus-environment debate regarding the causes of racial differences in academic performance. Rather, our purpose here is to ascertain whether differences in socioeconomic background, academic performance, and values and attitudes about education explain the racial gap in college attendance. That is, our objective is to empirically test the cultural, socioeconomic, and

academic achievement explanations in a single quantitative study to ascertain the extent to which they explain black-white differences in college attendance in the 1990s.

Data and Methods

Data

We utilize data from the 1988-94 National Education Longitudinal Survey (NELS). Data for NELS were collected via a two-stage stratified probability sampling design. First, a nationally representative sample of U.S. schools was obtained. Within each school, students were randomly selected. These procedures resulted in a NELS sample of 1,052 participating schools and 24,599 students. All students surveyed by NELS were in the eighth grade in 1988, and most of them graduated from high school in 1992. Students were selected into our analytic sample if they satisfied two conditions: (1) if they were interviewed by NELS in the fourth panel, and (2) if they had valid information on their college enrollment status. These selection criteria resulted in an analytic sample of 9,811 students.

Variables

From the 1994 panel data, we created our dependent variable, students' college enrollment status. This is a dichotomous variable that measures whether or not students have ever enrolled in a post-secondary education institution (coded 1 if yes; 0 if otherwise). 1 All explanatory variables are measured prior to 1994.

To test whether racial differences in achievement explain the black-white gap in college attendance, we employ measures of students' academic performance in 1992, when most of the NELS respondents were in the 12th grade. In 1992, as in 1988, the Educational Testing Service (ETS) administered standardized achievement tests to students participating in the NELS in four subject areas: math, science, reading, and history and government. To construct our measure of academic achievement, we calculated the average of the standardized scores (with mean of 50 and standard deviation of 10) in three of the four tests (reading, math, and science). The result is a continuous measure of academic achievement, which ranges from 30.57 to 69.69.

We use two variables to test the cultural explanation for black-white differences in college entry. The first measure, educational expectations, was ascertained in 1992 with the following question: "As things stand now, how far in school do you think you will get?" Students were asked to choose among ten levels of education ranging from less than high school graduation to a professional/graduate degree. We recoded this categorical variable into a dummy variable, which equals 1 if students expected to obtain a level of education that included at least a bachelor's degree and 0 if otherwise. Our second measure pertains to values about grades, asking how important it is to students to obtain good grades in school. Response categories were "not important," "somewhat important," "important," and "very important." We use the continuous form of this variable, with larger values indicating greater importance. We suggest that values about grades are a reasonable proxy for students' values regarding education in general.

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1. Included in this measurement of college enrollment are both two-year and four-year post-secondary institutions. We repeated the analysis using a second measure of college entry that was limited to enrollment in four-year institutions. Findings resulting from this restricted measure were similar to those using the broader measure and led to the same substantive conclusions presented in the paper. Results using the more restricted measure are available upon request.

Three variables measure various dimensions of students' socioeconomic background. The first is the socioeconomic status of their parents. NELS provides a composite variable measuring socioeconomic status, comprised of standardized measures of parents' education, parents' occupation, and family income. The SES variable was standardized to have a mean of zero and standard deviation of 1 for the whole sample of NELS. We intend the other two background variables to capture the school environment in the eighth grade. School type indicates whether the school was public or private. We also consider whether the school was located in an urban, suburban, or rural area. Last, we include gender as a demographic control variable.

Analytical Strategy

Our strategy for analyzing racial differences in college attendance is twofold, parallel to the two ways in which the proposed explanatory variables may effect racial differences in college attendance. The first way in which the explanatory variables impact on racial differences in college attendance is through racial differences in the distribution of the explanatory variables. Because of broader racial stratification, blacks and whites differ in the degree to which they possess resources and attributes that are important in the college-going process, and such compositional differences may account for the observed racial differences in college attendance. Second, blacks' and whites' probabilities of entering college may vary because the educational attainment process itself differs for the two groups, meaning that the same resources and attributes may have different meanings for blacks than for whites. That is, there may be interaction effects between race and predictors of college attendance (Portes and Wilson 1976).

To guide our investigation, we formulate two research strategies of multivariate analysis. We first assume that the racial gap is due to compositional differences, but not to differences in the educational attainment process itself. Thus, we assume that the relationships between college entry and all explanatory variables are the same for both groups, and that blacks and whites experience similar returns to their background and academic characteristics. Based on these assumptions, we model only the additive effects of explanatory variables in a logistic regression analysis of the probability of entering college.

Structural differences in the educational attainment process for blacks and whites potentially produce variation in their college-going probabilities. Thus, we further allow resources and attributes to have different returns to college attendance for whites and for blacks. Statistically, we achieve this by modeling the interactions between race and independent variables in our second set of logistic models.

Using the results from our full interaction model, we then perform a decomposition analysis to facilitate the interpretation of our multivariate results in two ways. First, it allows us to determine to what extent compositional differences in blacks' and whites' resources and attributes account for the racial gap in college attendance. Second, it provides another way of evaluating the three explanations for the racial gap in college attendance that we test. By partitioning the observed gap into the component due to each variable, we can compare individual and/or collections of variables to determine which ones contribute most to the racial gap. Therefore, we can compare the set of socioeconomic, academic achievement, and cultural variables to assess the relative strength of each explanation for the racial gap in college attendance.

Results

Descriptive Findings

In Table 1, we show, for each of the explanatory variables, the percentage distribution by race (the first two columns) and college enrollment rates by race (the last two columns). An examination of the percentage distribution of blacks and whites across explanatory variables represents the initial step in the investigation of the compositional differences between blacks and whites. These data reveal substantial differences between the two groups.

For example, fewer than one half of white youth come from family backgrounds in the two lowest SES groups; however, more than 70% of black youth come from such families, with almost one quarter of them in the lowest status interval compared to less than 10% of whites. More whites than blacks have high-status family backgrounds: 10% of white youth are found in the highest SES group, but less than three percent of blacks are similarly situated. These differences between blacks' and whites' socioeconomic family backgrounds substantially impacts their college enrollment rates. For both blacks and whites, college attendance rates increase monotonically with their socioeconomic family background. However, racial differences in college attendance varies across SES groups. In the lowest interval, the proportion of blacks who attended college in 1994 exceeded the proportion of comparable whites (37.7 versus 22.0, respectively, a difference of 15.7 percentage points). There is no substantial difference in the proportion of blacks and whites who entered college from the second lowest SES interval. However, whites from the two highest SES groups have higher college attendance rates than do similar blacks.

School type and urbanicity is related to college attendance for both groups. A larger proportion of blacks than whites attended public schools rather than private schools. Similarly, blacks were more likely to be in urban rather than suburban or rural schools. For both blacks and whites, rates of college enrollment vary across these variables, with students from private schools having higher rates of college enrollment than those from public schools, and students from rural schools having lower rates of college enrollment than those from urban and suburban schools. We note that the differential by school type (i.e., between private and public schools) is clearly in favor of white students, whereas the implications of urbanicity differentials are more ambiguous.2 Although there are no race differences in college entry among attendees of private schools, a 13 percentage-point difference characterizes the enrollment rates of whites and blacks from public schools. The racial gap in college entry varies little across urban, suburban, and rural schools.

Results of the bivariate relationship between race and achievement test scores indicate that blacks and whites differ in academic performance as measured by math, reading, and science standardized tests. Blacks are more concentrated in the lowest achievement score intervals than are whites, and a greater proportion of whites than blacks scored in the highest achievement score interval (17.4% versus 2.8%, respectively). Academic achievement appears to have a noticeable effect on college enrollment rates. Among both blacks and whites, the percentage of students attending college increases monotonically from the lowest to the highest achievement score interval. Comparing enrollment rates of blacks and whites within levels of achievement scores,

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2. We make this statement because blacks appear to benefit from attending suburban schools while they tend to be concentrated in urban schools. If we applied the urbanicity differentials of whites to blacks, blacks would benefit from urbanicity differentials, as compared to whites, due to blacks' lower proportion in rural schools.

Table 1. Percentage Distribution and College Enrollment Rates by Race and Other Explanatory Variables, Weighted. (Unweighted n=9811)

	Percentage Distribution		College Enrollment Rates[1]	
Variables	Blacks	Whites	Blacks	Whites
Total Sample			52.4	65.9
Gender[2]				
Men	49.8	50.2	45.5	63.4
Women	50.2	49.8	59.2	68.4
Socioeconomic Status[2]				
-2.875 – -1.000	24.5	8.4	37.7	22.0
-0.999 – 0.000	47.4	38.9	49.1	52.4
0.001 – 1.000	25.2	42.7	69.3	79.9
1.001 – 2.560	2.8	10.0	83.9	96.1
School Type[2]				
Private	6.2	12.7	85.6	85.9
Public	93.8	87.3	50.2	63.0
Urbanicity[2]				
Urban	49.0	18.3	54.4	70.4
Suburban	28.5	47.0	56.1	70.0
Rural	22.6	34.7	43.2	58.0
Standardized Achievement Score[3]				
30.000 – 40.000	23.4	7.8	36.1	30.6
40.001 – 50.000	24.7	22.8	61.2	52.9
50.001 – 60.000	15.8	28.2	68.6	80.4
60.001 – 70.000	2.8	17.4	98.1	93.7
Missing	33.3	23.9	45.9	52.5
Expectation for Bachelors' Degree[3]				
No	14.7	14.5	18.5	26.8
Yes	58.9	68.1	73.5	84.6
Missing	26.5	17.4	24.1	25.3
Values about Grades[4]				
1 'Not Important'	0.6	1.4	38.9	40.3
2 'Somewhat Important'	6.4	11.3	34.6	45.9
3 'Important'	22.0	33.5	58.4	63.6
4 'Very Important'	52.4	45.6	61.0	80.6
Missing	18.7	8.2	27.6	25.4

Data: 1988-94 National Education Longitudinal Study
[1]Measured in 1994.
[2]Measured in 1988.
[3]Measured in 1992.
[4]Measured in 1990.

however, reveals an unexpected pattern. In three of the four score intervals, the proportion of blacks who attended college exceeds the proportion of whites who did so. Taken alone, these results suggest that blacks go to college at the same or greater rate as whites of similar academic performance.

Lastly, two variables measure whether or not blacks and whites differ in their educational expectations and values regarding education. Results indicate that a smaller proportion of blacks expected to obtain a college degree than did whites. Given that youth who expected to complete college education were likely to enter college, this difference in expectation may contribute to the black-white gap in college attendance. In addition, larger proportions of whites who expected to earn a bachelor's degree entered college compared to blacks with the same expectation. Despite differences in educational expectations, blacks and whites valued education similarly. Less than five percentage points separate the proportions of blacks and whites who expressed that it was important or very important to obtain good grades in school. However, only 60% of blacks with this value enrolled in college, whereas 73% of whites did so.

In sum, descriptive statistics show racial differences in socioeconomic status, academic performance, and educational expectations, but negligible disparities in values regarding education. Blacks and whites differ not only in their distribution across these measures, but also in their rates of college entry within categories of SES, academic achievement, expectations and values. These findings suggest that both compositional differences and differential rates of return to attributes contribute to the black-white gap in college attendance.

Results of Additive Models of Logistic Regression

To more rigorously test the three competing explanations of racial differences in college attendance, we employ logistic regression. Table 2 contains five logistic regression models. The first simply reproduces the observed gap in the likelihood of entering college between blacks and whites. Models B through D test each explanation separately, with Model B testing the socioeconomic explanation, Model C testing the academic achievement explanation, and Model D testing the cultural explanation. Model E represents our full additive model.

As indicated in Model A, without controlling for other variables, the log odds of blacks attending college are substantially lower than those for whites. We obtain the odds of blacks enrolling in college relative to whites by exponentiating the coefficient, exp(-0.564), which indicates that blacks' odds of attending college are only 0.569 those of whites. Stated differently, the likelihood of blacks attending college is almost 43% lower than the odds of whites doing the same, [exp(-0.564) - 1].

In Model B, we add gender and measures of students' socioeconomic family background. Net of other variables in the model, the socioeconomic status of students' parents significantly affects their odds of attending college. Every one-unit (i.e., one standard deviation) increase in our index of socioeconomic background multiplies the odds of going to college by a factor of 4. These results are consistent with those of prior status attainment research.

Attending public school depresses one's chances of enrolling in college. This effect is both significant and substantial. Attendees of public schools have odds of attending college that are 58% below those of their private-school counterparts. That this effect is net socioeconomic background means that it cannot be explained by the concentration of poor students in public schools. Surprisingly, there is no difference in the odds of enrolling in college between students in urban and suburban schools. This may be the result of a growing similarity between urban and

Table 2. Selected Logit Models Predicting College Enrollment, Weighted Estimates (Unweighted n=9811).

	Model A		Model B		Model C		Model D		Model E	
Variables	B	S.E.	B	S.E.	B	S.E.	B	S.E.	B	S.E.
RACE										
Black	-0.564***	0.056	0.067	0.068	0.028	0.062	-0.528***	0.070	0.206**	0.079
GENDER										
Women			0.414***	0.047	0.379***	0.046	0.166***	0.052	0.343***	0.056
SES										
Socioeconomic Status			1.385***	0.039					0.888***	0.045
Public School (Reference=Private)			-0.867***	0.096					-0.631***	0.108
Suburban School (Reference=Urban)			0.112	0.065					0.117	0.076
Rural School (Reference=Urban)			0.080	0.068					0.009	0.080
ACADEMIC PERFORMANCE										
Cognitive Tests					0.126***	0.004			0.067***	0.004
EXPECTATIONS & VALUES										
Expect to Earn Bachelor's Degree							2.509***	0.071	1.940***	0.075
Values about Grades							0.434***	0.037	0.392***	0.039
Constant	0.659***	0.023	1.250***	0.098	-5.675***	0.184	-2.348***	0.132	-4.650***	0.272
Model Chi-square	99.99		2127.03		1853.58		3546.96		4594.45	
Degrees of Freedom	1		6		4		6		12	

*p<.05, **p<.01,***p<.001

Models include dummy variables denoting missing values for achievement test score, expectation for B.A. degree, and values about grades.

Data: 1988-94 National Educational Longitudinal Survey

suburban places. Unlike during prior decades when suburban areas represented a different environment and population than found in urban places, the suburbanization of the U.S. population over the 1970s and 1980s has diminished differences between the two landscapes (Long 1988).

Because the SES measures that affect college attendance are unequally distributed between blacks and whites in favor of the latter (Table 1), controlling for SES should reduce the net disadvantage of black students in attending college. Indeed, inclusion of SES variables in Model B reverses the coefficient for race from -0.564 (with SE=0.056) in Model A to 0.067 (with SE=0.068). The nonsignificant coefficient for race in Model B means that all black-white differences in college attendance can be attributed to racial differences in socioeconomic background. That is, blacks would be as likely to attend college as whites if they had the same socioeconomic background as whites.

Model C tests the achievement explanation for black-white differences in college-entry; whether differences in academic performance account for blacks' lower odds of college enrollment. Academic performance, as measured by our standardized achievement score, is related to students' chances of attending college. For every one-unit increase in test scores, the odds of attending college increase by 13.4%. As in Model B, the coefficient for being black is nonsignificant, indicating that racial disparities in college entry can be explained by racial differences in academic performance.

Model D tests the cultural explanation for the black-white gap in college attendance, with expectations and values about education as explanatory variables. Results indicate that students who expect to complete college actually enroll in college significantly more often than do students who do not expect to obtain degrees. In fact, the odds of attending college for students with expectations to earn B.A.s are more than 12 times those of students without this expectation. Additionally, the more importance students attribute to obtaining good grades in school, the more likely they are to attend college. However, these strong relationships between expectations and college enrollment and between values about grades and college enrollment are not sufficient to explain the lower odds of college entry for blacks compared with whites. The coefficient for blacks remains significantly negative, indicating that the odds of blacks going to college are still 41% lower than whites' even after controlling for differences in expectations and values.

The last of our additive models considers black-white differences in college enrollment controlling for all independent variables. All significant coefficients in Models B through D remain significant in the full model. The effects of socioeconomic background, public versus private school attendance, and urban versus rural schools remain significant, net of other variables included in the model, although the magnitudes of these effects diminish somewhat. Likewise, the effects of achievement test scores, educational expectations, and values about grades still significantly affect the odds of entering college. When all these factors are included in Model E, the odds of blacks attending college are 23% higher than the likelihood of whites.

Results of Interactive Models

Prior research has suggested that the educational attainment process differs between blacks and whites (Portes and Wilson 1976). Therefore, in Table 3, we explore the interaction effects between race and variables representing the three competing explanations for black-white differences in college entry. Model A is a logistic regression model with interactions between race and socioeconomic background. The estimated interaction coefficients indicate that

Table 3. Selected Logit Models Predicting College Enrollment with Interactions, Weighted Estimates. (Unweighted n=9811)

Variables	Model A		Model B		Model C		Model D	
	B	S.E.	B	S.E.	B	S.E.	B	S.E.
RACE								
Black	0.465	0.319	2.095***	0.456	-0.011	0.411	0.714	0.798
GENDER								
Women	0.410***	0.048	0.378***	0.046	0.170***	0.052	0.341***	0.056
SES								
Socioeconomic Status	1.599***	0.045					1.066***	0.053
Public School (Reference=Private)	-0.783***	0.103					-0.591***	0.116
Suburban School (Reference=Urban)	0.147	0.077					0.215*	0.090
Rural School (Reference=Urban)	0.144	0.081					0.147	0.095
ACADEMIC PERFORMANCE								
Standardized Achievement Score			0.135***	0.004			0.070***	0.005
EXPECTATIONS & VALUES								
Expect to Earn Bachelor's Degree					2.533***	0.077	1.819***	0.083
Values about Grades					0.459***	0.040	0.401***	0.043
INTERACTIONS								
Black x Socieconomic Status	-0.977***	0.088					-0.716***	0.108
Black x Public School	-0.702*	0.320					-0.456	0.356
Black x Suburban	-0.159	0.148					-0.294	0.174
Black x Rural	-0.301	0.160					-0.595**	0.189
Black x Standardized Achievement Score			-0.042***	0.010			-0.007	0.012
Black x Expect to Earn Bachelor's Degree					-0.132	0.204	0.516*	0.213
Black x Values about Grades					-0.171	0.105	-0.069	0.112
Constant	1.166***	0.104	-6.130***	0.207	-2.417***	0.142	-4.823***	0.298
Model Chi-square	2246.98		1884.35		3570.69		4661.94	
Degrees of Freedom	10		6		10		22	

*p<.05, **p<.01,***p<.001

Models include dummy variables denoting missing values for standardized achievement test score, expectations for B.A. degree, and values about grades.

Data: 1988-94 National Educational Longitudinal Study

socioeconomic background and public schooling yield significantly different effects on the college entry chances of blacks and whites. Recall that in our additive models, public school attendance depresses the likelihood of college entry. Interaction effects between public schooling and race mean that blacks are penalized more for attending public schools than are whites.

Likewise, returns to SES differ for the two groups. Specifically, blacks' chances of attending college respond less sharply to their social and economic background than those of whites, as indicated by the negative coefficient for the black-SES interaction (-0.977 with SE=0.088). Figure 1 provides a graphic representation for the race-SES interaction effect.3 Among students in the two lowest SES intervals, blacks have greater chances of attending college than do whites. Among high-SES students, however, whites attend college at greater rates than their black counterparts.

Model B allows the relationship between standardized test scores and college entry to differ between blacks and whites. While academic achievement positively affects college attendance for both groups, it leads to smaller increases in the chances of attending college among blacks than among whites, as represented by a negative interaction coefficient (-0.042 with SE=0.010). Figure 2 provides a graphic illustration of this interactive relationship. Note that Figure 2 gives predicted rates of college enrollment separately by quartiles of test scores. Among students who score in the lowest quartile, blacks' odds of entering college exceed those of whites, but there is little difference among blacks and whites who score in the second quartile. At the highest two quartiles, however, whites' chances of attending college surpass blacks'.

We include in Model C the interaction effects between educational expectations and race, and between values about grades and race. Neither interaction is significant, suggesting that blacks and whites benefit similarly from their expectations and values about education. Model D represents our full interaction model. The interaction effects between race and socioeconomic background remain statistically significant. However, the interaction effect between race and academic performance does not. Moreover, when we control for all other interactions in the model, we still do not find any differential effect of expectations and values by race.

Decomposition Analysis

The last stage of our study is a decomposition analysis, which allows us to estimate the contribution of each explanatory variable to the observed racial gap in college attendance. The analytical question is the following: if there were no compositional differences between whites and blacks in variable *k*, where *k* stands for the *k*th explanatory variable, how much racial difference in college attendance would be explained?

Hence, our decomposition analysis centers on compositional differences between blacks and whites in variables characterizing resources and attributes affecting college attendance. However, our exercise is complicated by the fact that returns to some of these variables appear to be different between blacks and whites (Table 3). To be conservative, we used both blacks' and whites' rates of return (their slopes), as estimated in Model D of Table 3 and ignored sampling

3. Figures 1 and 2 are graphical representations of the interaction effects between race and socioeconomic background, and between race and academic performance, with all other variables held constant at their overall sample means.

Figure 1: Interaction between Race and Socioeconomic Status (Model A, Table 3)

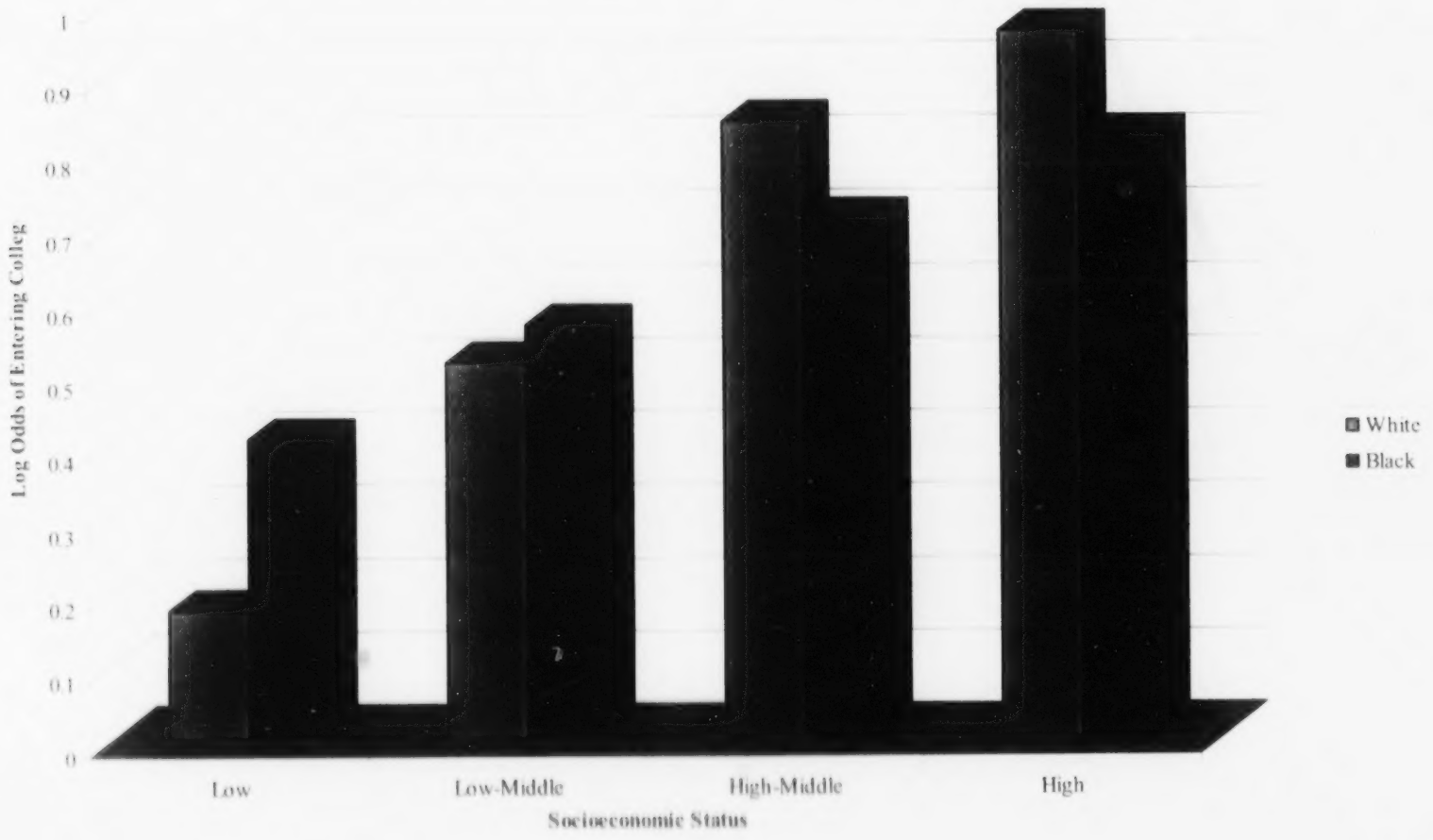

Figure 2: Interaction between Race and Academic Performance (Model B, Table 3)

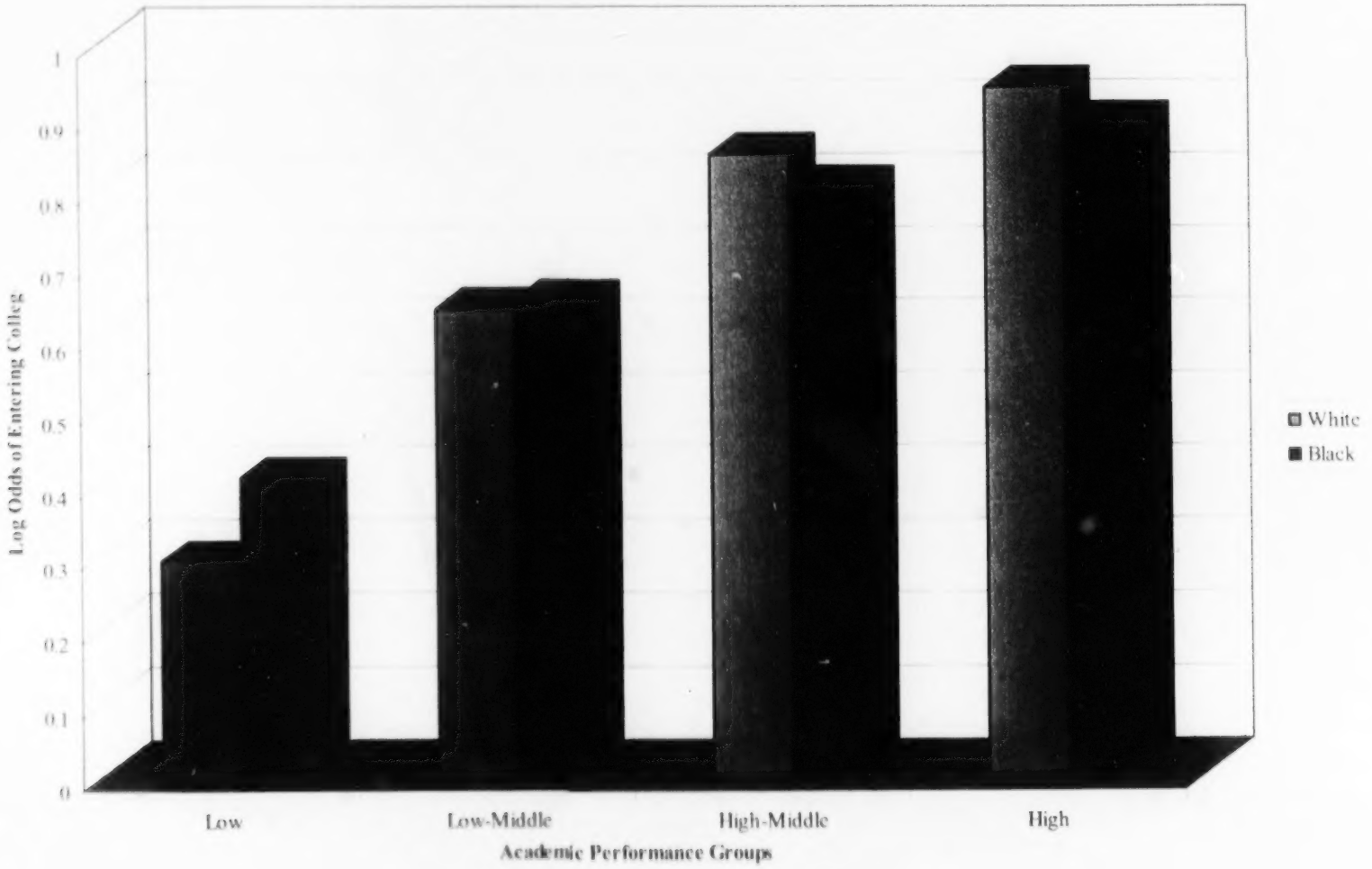

Table 4. Decomposition of Black-White Gap in College Enrollment.

Variable	Percent Explained Using White Slope	Percent Explained Using Black Slope
GENDER	**-0.19**	**-0.39**
Women	-0.19	-0.39
SES	**109.06**	**31.26**
Socioeconomic Status	91.88	31.98
Public School (Reference=Private)	6.84	11.83
Suburban School (Reference=Urban)	7.14	-2.76
Rural School (Reference=Urban)	3.20	-9.79
ACADEMIC PERFORMANCE	**93.79**	**86.01**
Standardized Achievement Score	93.79	86.01
EXPECTATIONS & VALUES	**15.0**	**26.63**
Expect to Earn Bachelor's Degree	29.83	38.13
Values about Grades	-14.83	-11.50
TOTAL PERCENT EXPLAINED	**217.67**	**143.51**

Numbers in bold represent the percentage of the racial gap in college entry explained by the collection of variables in each section.
Data: 1988-94 National Education Longitudinal Study.

errors of the estimates. The results are given in Table 4. The first column displays the results showing the significance of compositional differences between blacks and whites using whites' slopes. The entries represent the reduction in the racial gap if the means of whites were adjusted to the observed means of blacks along each explanatory variable, and both blacks and whites experienced whites' return to the variable. We computed each column entry by multiplying the mean difference between blacks and whites on an explanatory variable by that variable's corresponding slope for whites and then dividing this product by the racial gap (in logistic scale) in college attendance. While the decomposition is performed on one variable at a time, we sum the collective contribution of a cluster of variables representing the three explanations that we test, as presented in the table in boldface.

Similarly, the second column displays the results using blacks' slopes, and reflect the decrease in the racial gap that would result if blacks' means were adjusted to that of whites, and both blacks and whites experienced blacks' returns. While both sets of figures are given, we encourage the reader to interpret the decomposition results primarily using blacks' slopes (second column) rather than those using whites' slopes (first column). Our suggestion is dictated by the fact that blacks are disadvantaged relative to whites on all variables, and any effort to reduce racial disparities in college attendance will more likely involve improving blacks' standing on these variables rather than reducing that of whites (Jones and Kelley 1984). Thus, we are more interested in knowing the percent of the racial gap explained by raising blacks' socioeconomic background, academic performance, educational expectations and values regarding grades to the level of whites than we are by reducing whites' mean characteristics to that of blacks.

As shown in Table 1, 13.5 percentage points separate the proportion of blacks and whites who enrolled in college. Examining the last row in Table 4, we observe that compositional differences between blacks and whites, that is, differences in their means for those variables included in our multivariate model, fully account for this racial gap in college attendance. Collectively, variables included in our final model explain between 144% to 218% of the racial disparity in college enrollment, depending on which set of slopes are used.

Even more interesting than our model's ability to fully account for the black-white gap in college attendance is the relative contribution of each set of variables in explaining the disparity. Of the three explanations, academic achievement and socioeconomic background explain the largest proportion of the racial gap. Compositional differences in achievement scores explain from 86% to 94% of the gap, while the socioeconomic background variables explain between 31% and 109% of the gap.

The decomposition results using white slopes show roughly equal explanatory power between the socioeconomic explanation and the academic performance explanation, suggesting that the racial gap in college entry is overwhelmingly due to group differences in both socioeconomic family background and academic achievement. The expectations and values variables explain relatively little of the racial gap in college attendance. In contrast, the results from the black slopes beg for a greater distinction between the academic achievement explanation and socioeconomic background explanation. These results suggest that racial disparities in academic performance is the primary cause of the college attendance gap, with differences in socioeconomic family background, educational expectations and values being secondary.

Discussion and Conclusions

In this paper, we have tested three competing explanations of the black-white gap in college attendance. The cultural explanation suggests that the gap is due to blacks' lower expectations and values regarding education relative to whites'. The socioeconomic explanation argues that the gap is due to racial differences in the social and economic family backgrounds of youth. The achievement explanation attributes the college-going gap to racial differences in academic performance. Using a longitudinal data set, we found supporting evidence for the academic achievement explanation and socioeconomic background explanation.

We find evidence in support of the explanation that blacks do not attend college as often as whites because they do not perform as well academically in high school. Controlling for academic performance, the odds of blacks going to college would exceed those of whites. We also find evidence of a race-achievement interaction in that the effect of academic achievement is lower for blacks than for whites.

Before we jump to the conclusion that academic achievement provides the explanation, we hasten to emphasize the importance of socioeconomic background. First, socioeconomic background is important because it is a primary determinant of academic performance and thus indirectly affects college enrollment. In addition, we found large and significant direct effects of socioeconomic background and large racial differences in socioeconomic background that could fully explain blacks' lower rates of college entry compared with those of whites. If the family backgrounds of black and white students were similar, the odds of blacks attending college would equal those of whites. However, this is true only if blacks receive similar returns to their socioeconomic background as do whites, a proposition that is not supported by our data. The interaction between race and socioeconomic status (Figure 1) illustrates that SES does not yield the same effect on blacks' odds of entering college as for whites' chances of doing so. Rather, the likelihood of blacks going to college is greater than whites' at lower levels of socioeconomic background but falls below whites' at higher levels. In other words, blacks experience diminishing returns to social and economic status regarding their chances of attending college relative to whites. The decomposition results using the black slope show that even if blacks had the same socioeconomic background as whites but continued to experience their own returns, the college-going gap would close by less than one-third.

Research on a variety of topics such as racial disparities in wealth accumulation (Oliver and Shapiro 1995), residential segregation (Massey and Denton 1993), and the intersection of race and class in the lives of middle-class blacks (Pattillo-McCoy 1999) has demonstrated that middle-class status does not confer to blacks all the benefits, protections, and advantages it does to whites. In other words, the experience of being middle class is race-dependent. Our interactive models and decomposition results provide evidence that with respect to college enrollment, middle-class status in particular, and socioeconomic family background in general, do not operate to benefit blacks to the same extent as it does whites.

Our study yields strong and consistent evidence in support of both the academic achievement explanation and socioeconomic background explanation but does not adjudicate between the two. However, our investigation allows us to draw one firm conclusion: racial differences in educational expectations and values regarding education do not explain the black-white gap in college enrollment. This conclusion was first suggested by our descriptive statistics

that showed only a modest difference between the proportion of blacks and whites who expected to earn bachelor's degrees, and an even smaller difference in the percentage of blacks and whites who felt it was either important or very important to obtain good grades in school. Furthermore, our logistic regression analysis led us to conclude that, while educational expectations and values significantly improve the odds of attending college overall, they do not noticeably narrow the gap between blacks' and whites' odds of doing so. After controlling for these variables, blacks' likelihood of entering college remains substantially lower than the chances of whites in our additive models. Our decomposition analysis further supported this finding by showing that the variables representing expectations and values explain only a modest portion (15 to 27%) of the racial gap in college attendance. These results suggest that the utility of the cultural explanation for the black-white gap in college attendance is quite limited.

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